

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Application of:  
LIM, Sung Bae

Customer No.: 30827

Application No.: 10/580,119

Confirmation No. 7450

Filed: May 19, 2006

Art Unit: 1792

For: HEATER-MOUNTING STRUCTURE OF DISH  
WASHER, AND THE HEATER

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Examiner: Perrin, Joseph L.

MS AF  
Commissioner for Patents  
P.O. Box 1450  
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**AMENDMENT**

Sir:

In response to the final Office Action dated September 14, 2009, Applicant hereby requests entry of the following amendments.

**INTRODUCTORY COMMENTS**

**Amendments to the Claims** begin on page 2 of this paper.

**Remarks** begin on page 5 of this paper.

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1-17. (Canceled)

18. (Currently Amended) A dishwasher, comprising;

a tub for receiving dishes;

a sump housing which is coupled to a bottom of the tub to store washing water, the sump housing including a heater receiving portion;

a nozzle assembly including an upper nozzle and a lower nozzle to spray washing water onto the dishes;

a washing pump placed within the sump housing to pump out the washing water collected in the heater receiving portion, including:

a pump case, whole part of which being accommodated within the heater receiving portion; and

an impeller disposed in the pump case;

a washing motor mounted on an outer bottom portion of the sump housing to rotate the impeller; and

a heater disposed in the heater receiving portion and located adjacent the pump case.

19. (Previously Presented) The dishwasher according to claim 18, wherein the heater receiving portion is a groove with a predetermined depth and area enough to receive the heater.

20. (Previously Presented) The dishwasher according to claim 19, wherein the washing motor is mounted on an outer bottom surface of the heater receiving portion.

21. (Previously Presented) The dishwasher according to claim 18, wherein a heater insertion hole is formed on a sidewall of the sump housing.

22. (Previously Presented) The dishwasher according to claim 21, wherein the heater includes:

- a heating portion inserted into the heater receiving portion;
- a pressing plate provided at an end portion of the heating portion, and attached to an inner surface of the sidewall to shield the heater insertion hole; and
- a sealing case provided at the end portion of the heating portion, and attached to an outer surface of the sidewall to shield the heater insertion hole.

23. (Previously Presented) The dishwasher according to claim 22, wherein the pressing plate and the sealing case are tightly attached to the inner and outer surfaces of the sidewall, respectively, by a tightening member including bolt and nut.

24. (Previously Presented) The dishwasher according to claim 22, wherein the heating portion is bent at least three times in a meandering shape.

25. (Currently Amended) A dishwasher, comprising;

- a tub for receiving dishes;
- a sump housing which is coupled to a bottom of the tub to store washing water;
- a nozzle assembly including an upper nozzle and a lower nozzle to spray washing water onto the dishes;
- a washing pump to pump out the washing water collected in the sump housing;
- a washing motor mounted on an outer bottom portion of the sump housing, wherein a shaft of the motor passes through the bottom surface of the sump housing and is connected to the washing pump; and
- a heater disposed in the sump housing and located adjacent the washing pump;

wherein the water collected within the sump housing is supplied to at least the lower nozzle after being directly heated by contacting the heater.

26. (Previously Presented) The dishwasher according to claim 25, wherein the shaft vertically extends from the motor.

27. (Previously Presented) The dishwasher according to claim 26, wherein the sump

housing includes a recess to receive the heater.

28. (Previously Presented) The dishwasher according to claim 27, wherein the water discharged from the nozzle assembly is collected within the recess to be directly heated by the heater.

29. (Previously Presented) The dishwasher according to claim 27, wherein the washing pump is configured to pump out the water in the recess to at least the lower nozzle.

30. (Previously Presented) The dishwasher according to claim 25, wherein a heater insertion hole is formed on a sidewall of the sump housing.

31. (Previously Presented) The dishwasher according to claim 30, wherein the heater includes:

a heating portion inserted into the heater receiving portion;

a pressing plate provided at an end portion of the heating portion, and attached to an inner surface of the sidewall to shield the heater insertion hole; and

a sealing case provided at the end portion of the heating portion, and attached to an outer surface of the sidewall to shield the heater insertion hole.

32. (Previously Presented) The dishwasher according to claim 31, wherein the pressing plate and the sealing case are tightly attached to the inner and outer surfaces of the sidewall, respectively, by a tightening member including bolt and nut.

33. (Previously Presented) The dishwasher according to claim 31, wherein the heating portion is bent at least three times in a meandering shape.

### REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated September 14, 2009 has been received and its contents carefully reviewed.

Claims 18 and 25 are hereby amended and claims 1-17 were previously canceled without prejudice or disclaimer of the subject matter contained therein. No new matter has been added. Accordingly, claims 18-33 are currently pending. Reexamination and reconsideration of the pending claims is respectfully requested.

**The Office rejects claims 18-21, 25, and 27-30 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,620,014 to Milocco et al. (hereinafter “*Milocco*”).** *Office Action* at p. 3. Applicant respectfully traverses the rejection.

Independent claim 18 is allowable in that it recites, among other features, “a heater disposed in the heater receiving portion and located adjacent the pump case.” (Emphasis added).

Independent claim 25 is allowable in that it recites, among other features, “a heater disposed in the sump housing and located adjacent the washing pump.” (Emphasis added).

*Milocco* fails to describe, either expressly or inherently, at least these features of the claimed invention.

At most, *Milocco* discloses that “the casing 10,... houses electric heating means, such as a resistance-type heating element 11,” and that water must travel, “from the delivery side 14 of the pump 8 along the conduit 9 and through the casing 10.” *Milocco* at col. 2, ll. 31-32 and ll. 53-55. Thus, indicating that heating element 11 is not, “located adjacent the pump case,” as recited in claims 18 and 25. *See id.* Additionally, Figure 1 of *Milocco* and its associated text, indicate that the resistance-type heating element 11 is merely located adjacent to the washing tank’s bottom 4, the conduit 9, inlet 12, and outlet 13. *Milocco* at col. 2, ll. 12-62 and Fig. 1. Additionally, the re-circulation pump 8 is merely located adjacent to the driving motor 17, the conduit 9, and delivery side 14. *See id.* Thus, *Milocco* cannot disclose or suggest, at least, “a heater disposed in the heater receiving portion and located adjacent the pump case,” as recited in claim 18, and “a heater disposed in the sump housing and located adjacent the washing pump,” as recited in claim 25. (Emphasis added).

Accordingly, Applicant respectfully submits that independent claims 18 and 25 are patentably distinguishable over *Milocco*. It stands to reason that claims 19-21 and 27-30, which variously depend from claims 18 and 25, are also patentable distinguishable for at least the same reasons. Thus, Applicant respectfully requests the Office to withdraw the rejection of claims 18-21, 25, and 27-30 under 35 U.S.C. § 102(b).

**The Office rejects claims 22-24 and 31-33 under 35 U.S.C. § 103(a) as being unpatentable over *Milocco*.** *Office Action* at p. 5. Applicant respectfully traverses the rejection.

Claims 22-24 and 31-33 are allowable in that they variously depend from independent claims 18 and 25. As discussed above, *Milocco* fails to disclose or suggest all the features of claims 18 and 25.

Accordingly, Applicants respectfully submit that independent claims 18 and 25 are patentably distinguishable over *Milocco*. It stands to reason that claims 22-24 and 31-33, which variously depend from independent claims 18 and 25, are also patentably distinguishable for at least the same reasons. Therefore, Applicants respectfully request the Office to withdraw the 35 U.S.C. § 103(a) rejection of claims 22-24 and 31-33.

**The Office rejects claim 26 under 35 U.S.C. § 103(a) as being unpatentable over *Milocco* in view of U.S. Patent No. 5,165,433 to Meyers *et al.* (hereinafter “*Meyers*”).** *Office Action* at p. 6. Applicant respectfully traverses the rejection.

Claim 26 is allowable in that it depends from independent claim 25. As discussed above, *Milocco* fails to disclose or suggest all the features of claim 25. *Meyers* fails to cure the deficiencies of *Milocco*. In fact, *Meyers* is merely cited for a purported teaching of a vertical motor shaft. *Office Action* at pp. 7.

Accordingly, Applicant respectfully submits that independent claim 25 is patentably distinguishable over *Milocco* in view of *Meyers*. It stands to reason that claim 26, which depends from independent claim 25, is also patentably distinguishable for at least the same reasons. Therefore, Applicant respectfully requests the Office to withdraw the 35 U.S.C. § 103(a) rejection of claim 26.

**CONCLUSION**

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

Dated: **November 16, 2009**

Respectfully submitted,

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